

CLAIMS

WHAT IS CLAIMED IS:

1. A therapeutic magnetic device, comprising:
a motor enclosed within a cover;
a connection to said motor;
a free moving member connected to said connection, said free moving member
5 having an inner surface substantially defining a chamber and said free
moving member having at least two openings;
a magnetic unit rotatably housed in said chamber and having two protruding
arms extending from said magnetic unit in diametrically opposite directions
and through said at least two openings in said free moving member;
10 a rolling member mounted on an end of one of said two protruding arms;
an annular rolling surface mounted in said cover for imparting an angular force
on said rolling member as said rolling member moves along said annular
rolling surface;
a retainer member which exerts an axial force on said free moving member to
15 insure that said rolling member engages with said annular rolling surface;
wherein said magnet unit is held so as to rotate about two axes at the same time.
2. A device as set forth in claim 1, wherein said free moving member further comprises a
pivot structure at one apex and a drive extension at the other apex of said free moving member
so that said free moving member may freely rotate within said cover about an axis defined by
20 the line between said pivot structure and said drive extension.

3. A device as set forth in claim 1, wherein said retainer member comprises a structure selected from the group consisting of washers, diaphragms, and springs.

4. A device as set forth in claim 1, wherein said rolling member has a surface comprising an elastomeric material.

5. A therapeutic magnetic device, comprising:

a magnet;

a free moving member surrounding said magnet, said free moving member

having one or more extensions;

a cover having an inner surface surrounding said free moving member and said

magnet, said inner surface defining a circumferential groove having a rolling surface;

a rod mounted to said magnet and having at least one end extending beyond said free moving member

a rolling member mounted on one of said at least one end of said rod, said

rolling member disposed in communication with said rolling surface; and

a motor in mechanical communication with one of said extensions on said free moving member;

wherein rotation of the motor causes the free moving member to rotate, which

causes said rolling member to move along ^{a gripping surface} ~~said gripping surface~~, which in

turn causes said rolling member to roll, thereby producing biaxial rotation of the magnet for therapeutic use on the body of a human or animal.

6. A magnetic therapeutic device as set forth in claim 5, wherein said magnet is substantially spherical.

7. A magnetic therapeutic device as set forth in claim 5, wherein said free moving member is substantially spherical.

8. A magnetic therapeutic device as set forth in claim 5, wherein said free moving member is substantially circular.

9. A magnetic therapeutic device as set forth in claim 5, wherein said motor is a DC motor.

10. A magnetic therapeutic device as set forth in claim 5, wherein said rolling member has a surface comprising an elastomeric material.

11. A magnetic therapeutic device comprising:
a free moving circular track;
a motor in mechanical communication with said free moving circular track for driving said free moving circular track in a circular motion;
a stationary circular track that does not rotate relative to said motor;
a magnetic unit disposed within said free moving track and said stationary circular track;
a rod having mounted to said magnetic unit with two ends extending therefrom;
a drive gear mounted to at least one of said two ends, and in contact with said free moving circular track and with said stationary circular track;
whereby, as the motor drives said free moving circular track in a circular direction, said drive gear both moves in the same circular direction and at

the same time rolls in a direction perpendicular thereto, causing said magnetic unit to rotate about two separate axes of rotation and thereby producing a time-varying field of magnetic flux density and a time-varying field of angular flux displacement used for therapeutic purposes.

5 12. A magnetic therapeutic device as set forth in claim 11, wherein said stationary circular track is mounted to a cover that at least partially encloses said stationary circular track, said magnetic unit, and said free moving circular track.

13. A magnetic therapeutic device, comprising:

a magnet having at least one protruding arm;

10 a free moving member having at least one opening through which said at least one protruding arm rotatably extends, so that said magnet and said at least one protruding arm may freely rotate relative to said free moving member;

a motor, said motor coupled to said free moving member for rotating said free moving member and said magnet about a first axis of rotation;

15 a rolling member mounted to said protruding arm outside said free moving member, and in contact with an annular surface that does not rotate at the same speed as said free moving member;

wherein ^a speed differential between said free moving member and said annular surface causes rolling member and said magnet to roll about a second axis of rotation, thereby causing said magnet to rotate and roll at the same time about two separate axes producing a time-varying field of

magnetic flux density and a time-varying field of angular flux displacement
for therapeutic use on the body of a human or animal.

14. A magnetic therapeutic device as set forth in claim 13, wherein said magnet is substantially spherical.

15. A magnetic therapeutic device as set forth in claim 13, wherein said free moving member is substantially spherical.

16. A magnetic therapeutic device as set forth in claim 13, wherein said free moving member is substantially circular.

17. A magnetic therapeutic device as set forth in claim 13, wherein said motor is a DC motor.

18. A magnetic therapeutic device comprising:
means for rotating a magnet about a first axis of rotation; and
means for rolling said magnet about a second axis of rotation;
wherein said means for rolling does not cause said means for rotating to roll
about said second axis of rotation; and
wherein a time-varying field of magnetic flux density and a time-varying
field of angular flux displacement is produced from the simultaneous rotating
and rolling of said magnet about each of said first and second axes of
rotation for therapeutic use on a human or animal body.

19. A magnetic therapeutic device as set forth in claim 18, wherein said movement of said magnetic rotating means caused by a DC motor.

20. A magnetic therapeutic device as set forth in claim 18, wherein said magnet is substantially spherical.

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